AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A biosensor for detection of an antigen (6) by means of an antigen/antibody coupling, consisting of the following elements:

- a silicon substrate (2),
- at least one interdigital electrode pair structure (12) of electrodes (13) arranged in pairs accommodated on the silicon substrate (2) with a spacing between the electrode pairs of maximum 1.0 µm,
- counter-electrode (11) accommodated on the silicon substrate (2),
- a reference electrode (9),
- a first layer made of protein (4) at least covering over the interdigital electrode structure (12),
- a selective second protein layer applied over the first layer which contains a selected capture antibody (5) corresponding to the detecting antigen (6) and which can couple to the antigen,
- with a sensor signal being able to be read out at the interdigital electrode structure (12) if an antigen (6) is coupled to the capture antibody (5) and by means of an enzyme-

marked detection antibody (7) also coupled to the antigen, an enzymatic release of a redox-reactive molecule on the sensor surface (1) occurs, wherein,

for increasing selectivity of the second layer, the capture antibodies (5) are immobilized over the interdigital electrode structure (12) by the protein (4) of the first layer.

2. (previously presented) The biosensor as claimed in claim 1, in which the first protein layer consists of the Protein A, Protein G or Protein G'.

3. (cancelled)

4. (previously presented) The biosensor as claimed in claim 1, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

5. (previously presented) The biosensor as claimed in claim 1, which is coupled with a potentiostat for readout of the sensor signal.

6. (previously presented) The biosensor as claimed in claim 1, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.

7. (currently amended) The biosensor ~~Biosensor~~ as claimed in claim 1, in which interdigital electrode structures (12) and counter-electrode (11) are made of gold.

8. (previously presented) The biosensor as claimed in claim 1, in which the reference electrode represents an Ag/AgCl reference electrode.

9. (previously presented) The biosensor as claimed in claim 1, in which the reference electrode is integrated onto the sensor chip.

10. (previously presented) The biosensor as claimed in claim 1, in which the antigen (6) is simultaneously an allergen.

11. (previously presented) The biosensor as claimed in claim 1, in which the antigen (6) is a protein, a polypeptide or oligopeptide.

12. (previously presented) The biosensor as claimed in claim 1, in which the antigen is a bacterium or a virus.

13. (previously presented) The biosensor as claimed in claim 1, in which the antigen is an organic compound selected from the group consisting of a toxin, a medicine, a pesticide, anthrax, an antibiotic and an aromatic hydrocarbon.

14. (previously presented) A method for operation of a biosensor for detection of an antigen (6) by means of an antigen/antibody coupling, which features the following steps:

- coating a biosensor constructed on a silicon chip with a protein base coating with a protein A, G or G` with simultaneous covering of interdigital electrode pair structures (12) on the surface of the silicon chip;
- fabricating a further layer on the protein coating which contains a capture antibody (5) which is selected so that it can coupled with the antigen (6) sought;
- contacting the sensor surface (1) with a fluid to be analyzed, with an antigen contained in the fluid being able to be bound selectively to the antibodies of the uppermost layer;
- marking the antigen (6) by a detection antibody (7) which is coupled with an enzyme and which simultaneously couples with the antigen (6); and

- reading a sensor signal by means of a potentiostat through redox recycling, with the enzyme-bound detection antibody (7) causing an enzymatic release of a redox-reactive molecule on the sensor surface and counter-electrode and reference electrode being located in the same flow system as the sensor surface.

15. (currently amended) The ~~biosensor~~ method as claimed in claim [[2]] 14, in which ~~for increasing selectivity of the second layer the capture antibodies (5) feature~~ the capture antibody (5) features a directed binding to the protein (4) of the first layer.

16. (previously presented) The biosensor as claimed in claim 2, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

17. (currently amended) The biosensor as claimed in claim [[3]] 1, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

18. (previously presented) The biosensor as claimed in claim 2, which is coupled with a potentiostat for readout of the sensor signal.

19. (previously presented) The biosensor as claimed in claim 2, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.

20. (currently amended) The biosensor as claimed in claim [[3]] 1, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.